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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/658,236

09/08/2003

Gang Yu

UC0013 US NA

4110

23906 7590 02/23/2007  
E I DU PONT DE NEMOURS AND COMPANY  
LEGAL PATENT RECORDS CENTER  
BARLEY MILL PLAZA 25/1128  
4417 LANCASTER PIKE  
WILMINGTON, DE 19805

EXAMINER

SANTIAGO, MARICELI

ART UNIT

PAPER NUMBER

2879

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/658,236	YU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Mariceli Santiago	2879	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5,6,9-13 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,6,9-13 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 16, 2006 has been entered.

### ***Response to Amendment***

The Amendment, filed on October 16, 2006, has been entered and acknowledged by the Examiner.

Cancellation of claims 2, 4, 7, 8, 14-18 has been entered.

Claims 1, 3, 5, 6, 9-13 and 19 are pending in the instant application.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1, 3, 5, 6, 9, 11, 13 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Berger et al. (WO 00/35028 A1).

Regarding claim 1, Berger discloses an organic electronic device comprising a first electrode (10), a second electrode (11) and an organic active layer (12), wherein the first electrode lies on a opposite side of the organic active layer, compared to the second electrode, and at least one layer selected from the first electrode and the second electrode is configured to achieve low  $L_{\text{background}}$ . Berger discloses one of the electrodes formed of a reflectivity influencing material (see Page 12, starting at line 16), the reflectivity influencing material improve the pattern of light emission by reducing emission of more obliquely angled light and reducing reflection of ambient light, thus providing for a low  $L_{\text{background}}$ .

In regards to the recitation "configured to achieve low  $L_{\text{background}}$ ", it has been held that the recitation of an element being capable of performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Regarding claims 3 and 9, the claim states equations to determine the thickness of a first and a second layer, in which the equations are derived from Snell's Law. It is noticed that "Phenomena of nature, though just discovered, mental processes, abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." *Benson*, 409 U.S. at 67, 175 USPQ at 675. Berger's disclosed element layers of the organic electronic device inherently comprise the variables require to determine a thickness of a given layer (i.e., refractive index, angle of incident radiation, total phase change, and wavelength), since no numerical range defining the thickness value is claimed, Berger's teachings meet the claimed limitation of a thickness range that could be determined by the claimed equations.

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Regarding claim 5, Berger discloses an organic electronic device comprising an organic active layer, and a first electrode having a side opposite the organic active layer, wherein the first electrode comprises a first electrode layer lying at the side opposite the organic active layer and the first electrode layer is configured to achieve low  $L_{\text{background}}$ . Berger discloses one of the electrodes formed of a reflectivity influencing material (see Page 12, starting at line 16), the reflectivity influencing material improve the pattern of light emission by reducing emission of more obliquely angled light and reducing reflection of ambient light, thus providing for a low  $L_{\text{background}}$ .

Regarding claim 6, Berger discloses an organic electronic device further comprising a second electrode (11), wherein the organic active layer lies between the first electrode and the second electrode, a second electrode has a side opposite the organic active layer, and the second electrode comprises a second layer lying at the side opposite the organic active layer, and wherein the second electrode layer is configured to achieve a low  $L_{\text{background}}$ . Berger discloses the second electrode made of ITO transparent material, accounting for a minimum ambient light reflection from the second electrode, thus, providing for a low  $L_{\text{background}}$ .

Regarding claims 11 and 13, Berger discloses an organic electronic device wherein the first electrode layer comprises a metal selected from a transition metal and an elemental metal, wherein the first electrode layer further comprises a oxide of the metal (see Page 13, staring at line 14).

Regarding claim 19, Berger discloses an organic electronic device wherein the electronic device is a light-emitting display.

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Claims 1, 3, 5, 9-11, 13 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by May (US 6,211,613).

Regarding claims 1 and 10, May discloses an organic electronic device comprising a first electrode (4, Fig. 2), a second electrode (2, Fig. 1) and an organic active layer (6), wherein the first electrode lies on a opposite side of the organic active layer, compared to the second electrode, and at least one layer selected from the first electrode, the second electrode, a hole-transport layer, an electron-transport layer and the organic active is configured to achieve low  $L_{\text{background}}$ . May achieves a low  $L_{\text{background}}$  by further configuring the first electrode, glass substrate and the organic active layer with similar or equal indices of refraction (Column 2, lines 20-23 and Column 5, lines 24-64) to obtain low unwanted reflections (i.e., low interfacial reflectivity), wherein the unwanted reflection is less than 1%. Furthermore, as shown by equations 1 and 2 of May's disclosure the interfacial reflectivity can be determined based on the indices of refraction of the first electrode and an adjacent layer (i.e., glass substrate 12 or polymer layer 6).

In regards to the recitation "configured to achieve low  $L_{\text{background}}$ ", it has been held that the recitation of an element being capable of performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Regarding claim 5, May discloses an organic electronic device comprising an organic active layer, and a first electrode having a side opposite the organic active layer, wherein the first electrode comprises a first electrode layer lying at the side opposite the organic active layer and the first electrode layer is configured to achieve low  $L_{\text{background}}$ . May achieves a low  $L_{\text{background}}$  by configuring the first electrode, second electrode and the organic active layer with similar or

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equal indices of refraction (Column 2, lines 20-23 and Column 5, lines 24-64) to obtain a low unwanted reflection, wherein the unwanted reflection (i.e., interfacial reflectivity) is less than 1%.

Regarding claims 3 and 9, the claim states equations to determine the thickness of a first and a second layer. It is noticed that, "Phenomena of nature, though just discovered, mental processes, abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." *Benson*, 409 U.S. at 67, 175 USPQ at 675. Ko's disclosed element layers of the organic electronic device inherently comprise the variables require to determine a thickness of a given layer (i.e., refractive index, angle of incident radiation, total phase change, and wavelength), since no numerical range defining the thickness value is claimed, May's teachings meet the claimed limitation of a thickness range that could be determined by the claimed equations.

Regarding claims 11 and 13, May discloses an organic electronic device wherein the first electrode layer comprises a metal selected from a transition metal and an elemental metal, and wherein the first electrode layer further comprises a oxide of the metal (ITO, Column 2, lines 20-23).

Regarding claim 19, May discloses an organic electronic device wherein the electronic device is a light-emitting display.

Claims 1, 3, 5, 6, 9, 11-13 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Ko (US 6,876,018).

Regarding claim 1, Ko discloses an organic electronic device comprising a first electrode (34, Fig. 4; 52, Fig. 6), a second electrode (38, Fig. 4; 56, Fig. 6) and an organic active layer (36, Fig. 4; 60, Fig. 6), wherein the first electrode lies on a opposite side of the organic active layer, compared to the second electrode, and at least one layer selected from the first electrode,



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the second electrode, a hole-transport layer, an electron-transport layer and the organic active is configured to achieve low  $L_{\text{background}}$ . Ko discloses the adjustment of the thickness of the organic layer and the transparent electrode in order to reduce the ambient-light reflection, thus providing for a low  $L_{\text{background}}$ .

In regards to the recitation "configured to achieve low  $L_{\text{background}}$ ", it has been held that the recitation of an element being capable of performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Regarding claim 5, Ko discloses an organic electronic device comprising an organic active layer, and a first electrode having a side opposite the organic active layer, wherein the first electrode comprises a first electrode layer lying at the side opposite the organic active layer and the first electrode layer is configured to achieve low  $L_{\text{background}}$ . Ko discloses the adjustment of the thickness of the organic layer and the transparent electrode in order to reduce the ambient-light reflection, thus providing for a low  $L_{\text{background}}$ .

Regarding claims 3 and 9, the claim states equations to determine the thickness of a first and a second layer. It is noticed that, "Phenomena of nature, though just discovered, mental processes, abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." *Benson*, 409 U.S. at 67, 175 USPQ at 675. Ko's disclosed element layers of the organic electronic device inherently comprise the variables require to determine a thickness of a given layer (i.e., refractive index, angle of incident radiation, total phase change, and wavelength), since no numerical range defining the thickness value is claimed, Ko's teachings meet the claimed limitation of a thickness range that could be determined by the claimed equations.



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Regarding claim 6, Ko discloses an organic electronic device further comprising a second electrode (56, Fig. 6), wherein the organic active layer lies between the first electrode and the second electrode, a second electrode has a side opposite the organic active layer, and the second electrode comprises a second layer lying at the side opposite the organic active layer, and wherein the second electrode layer is configured to achieve a low  $L_{\text{background}}$ . Ko discloses the second electrode made of ITO or IZO transparent material, accounting for a minimum ambient light reflection from the second electrode, thus, providing for a low  $L_{\text{background}}$ .

Regarding claims 11-13, Ko discloses an organic electronic device wherein the first electrode layer comprises a metal selected from a transition metal and an elemental metal (34, Column 3, lines 25-29; 52, Column 4, lines 25-35), wherein the metal is selected from a group consisting of Au, Cr, Si and Ta (52, Column 4, lines 25-35), and wherein the first electrode layer further comprises a oxide of the metal (34, Column 3, lines 25-29).

Regarding claim 19, Ko discloses an organic electronic device wherein the electronic device is a light-emitting display.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 3, 5, 6, 9-13 and 19 have been considered but are moot in view of the new grounds of rejection.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mariceli Santiago  
Primary Examiner  
Art Unit 2879